

Applic. No. 10/823,226

Amdt. dated April 28, 2005

Reply to Office action of December 28, 2004

Claim Amendments

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A membrane for a membrane plate of a filter press, the membrane comprising:

a membrane surface without perforations and having a plurality of supporting elements selected from the group consisting of ribs and bosses, said supporting elements each having a given surface;

a membrane margin enclosing said membrane surface; and

at least one planar region disposed spaced apart from said membrane margin and having a surface larger than said given surface of one of said supporting elements and positioned disposed opposite to a sludge inflow in a final mounting state with of the membrane plate.

Claim 2 (original): The membrane according to claim 1, wherein said planar region has a reinforcement.

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Claim 3 (original): The membrane according to claim 2, wherein said reinforcement is a thickening of a membrane material of said planar region.

Claim 4 (original): The membrane according to claim 3, wherein said reinforcement is an insert of a reinforcing material into said membrane material.

Claim 5 (original): The membrane according to claim 3, further comprising a membrane carrier plate having a groove formed therein;

wherein said membrane margin has a peripheral bead engaging said groove of said membrane carrier plate; and

further comprising a sealing lip integrally formed firmly on said peripheral bead.

Claim 6 (original): The membrane according to claim 5, further comprising a sealing strip formed on said peripheral bead.

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Claim 7 (original): The membrane according to claim 6, wherein said peripheral bead is disposed so as to face away from said sealing lip.

Claim 8 (original): The membrane according to claim 5, wherein said peripheral bead is made of a bead material being identical to said membrane material.

Claim 9 (original): The membrane according to claim 8, wherein said bead material has a Shore hardness of about 90° ShA.

Claim 10 (original): The membrane according to claim 8, wherein said sealing lip is formed of a material having a lower Shore hardness than said bead material.

Claim 11 (original): The membrane according to claim 5, wherein said peripheral bead has a U-shaped holding projection, and said sealing lip is integrally formed on an outer lower edge of said U-shaped holding projection.

Claim 12 (original): The membrane according to claim 5, wherein:

said sealing lip is formed of a given material; and

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said peripheral bead is formed of a bead material configured differently than said given material of said sealing lip in terms of color.

Claim 13 (currently amended): A membrane plate for a filter press, comprising:

a membrane containing:

a membrane surface without perforations and having a plurality of supporting elements selected from the group consisting of ribs and bosses, said supporting elements each having a given surface;

a membrane margin enclosing said membrane surface;

at least one planar region disposed spaced apart from said membrane margin and having a surface larger than said given surface of one of said supporting elements;
and

a peripheral bead extending from said membrane margin;
and

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a membrane carrier plate having a plate margin for contacting at least one chamber plate to form a filtration chamber, said membrane carrier plate having a peripheral groove formed therein and said peripheral bead of said membrane disposed in said peripheral groove;

said at least one planar region positioned disposed opposite to a sludge inflow of said at least one chamber plate in a final mounting state of said membrane carrier plate.

Claim 14 (original): The membrane plate according to claim 13, wherein the membrane plate has a longitudinal center axis and is constructed mirror-symmetrically about said longitudinal center axis.

Claim 15 (original): A chamber plate for a filter press, comprising:

a chamber plate body with a chamber plate margin for contacting at least one membrane plate for forming a filter chamber; and

a plurality of sludge inflows, each of said sludge inflows having an inflow orifice formed therein and spaced apart from said chamber plate margin for introducing a suspension into

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the filtration chamber and an outlet duct extending in a region of said inflow orifice substantially perpendicularly to a longitudinal direction of the chamber plate.

Claim 16 (original): The chamber plate according to claim 15, wherein:

said chamber plate body further has a sealing margin slope and an inflow duct formed in said chamber plate body, said inflow duct extends from said chamber plate margin into said sealing margin slope; and

said inflow orifice adjoins said an inflow duct.

Claim 17 (original): The chamber plate according to claim 15, wherein said sludge inflows each has a non-return valve.

Claim 18 (original): The chamber plate according to claim 15, wherein the chamber plate has a longitudinal center axis and is constructed mirror-symmetrically about said longitudinal center axis.

Claim 19 (original): A plate stack for a filter press, the plate stack comprising:

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a plurality of membrane plates each containing:

a membrane including;

a membrane surface without perforations and having a plurality of supporting elements selected from the group consisting of ribs and bosses, said supporting elements each having a given surface;

a membrane margin enclosing said membrane surface;

at least one planar region disposed spaced apart from said membrane margin and having a surface larger than said given surface of one of said supporting elements; and

a peripheral bead extending from said membrane margin; and

a membrane carrier plate having a plate margin with a peripheral groove formed therein and said peripheral bead of said membrane being disposed in said peripheral groove; and

a plurality of chamber plates each having a plurality of sludge inflows each with an inflow orifice formed therein and

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disposed substantially opposite said planar region of said membrane, each of said membrane plates contacting at least one of said chamber plates for forming a filtration chamber.

Claim 20 (original): The plate stack according to claim 19, wherein each of said chamber plates contains:

a chamber plate body with a chamber plate margin for contacting at least one of said membrane plates for forming said filter chamber; and

said inflow orifice spaced apart from said chamber plate margin for introducing a suspension into said filtration chamber and an outlet duct extending in a region of said inflow orifice substantially perpendicularly to a longitudinal direction of said chamber plate.

Claim 21 (original): The plate stack according to claim 19, wherein said planar region of said membranes is disposed and configured to completely cover said inflow orifice.

Claim 22 (original): A filter press, comprising:

a plate stack containing:

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a plurality of membrane plates each containing:

a membrane including;

a membrane surface without perforations and
having a plurality of supporting elements
selected from the group consisting of ribs and
bosses, said supporting elements each having a
given surface;

a membrane margin enclosing said membrane
surface;

at least one planar region disposed spaced
apart from said membrane margin and having a
surface larger than said given surface of one
of said supporting elements; and

a peripheral bead extending from said membrane
margin; and

a membrane carrier plate having a plate margin with
a peripheral groove formed therein and said
peripheral bead of said membrane being disposed in
said peripheral groove; and

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a plurality of chamber plates each having a plurality of sludge inflows each with an inflow orifice formed therein and disposed substantially opposite said plane region of said membrane, each of said membrane plates contacting at least one of said chamber plates for forming a filtration chamber.